

WHAT IS CLAIMED IS:

1. An object detection system for a vehicle mobility access device comprising:
an electrode coupled to a portion of the mobility access device for defining
an electric field;
an electric field imaging module for energizing the electrode and sampling
the electric field; and
a controller for operating the mobility access device, the controller in
communication with the electric field imaging module for receiving an output therefrom
indicative of the presence of an object in or proximate to the electric field.
2. The system of claim 1 wherein the electrode comprises a zigzag pattern, the
shape thereof providing the electric field with a known shape and volume.
3. The system of claim 1 wherein the electrode comprises a conductive film.
4. The system of claim 3 wherein the conductive film comprises mylar.
5. The system of claim 1 wherein the electrode comprises a flex circuit.
6. The system of claim 1 wherein the electrode comprises a wire.
7. The system of claim 1 wherein the controller prevents operation of the
mobility access device in response to the output.
8. The system of claim 1 wherein the vehicle mobility access device comprises
a wheelchair lift including a lift platform, an inboard rollstop, an outboard rollstop and a
baseplate.
9. The system of claim 8 wherein the electrode is coupled to one of the lift
platform, inboard rollstop, outboard rollstop and the baseplate.

10. The system of claim 8 wherein the electrode comprises a plurality of electrodes and at least one electrode of the plurality is coupled to each of the platform, inboard rollstop, outboard rollstop and the baseplate.

11. The system of claim 10 wherein the plurality of electrodes are energized in succession to discriminate one or more of the object's size, the object's shape and the object's distance from each of the plurality of electrodes.

12. The system of claim 1 wherein the controller and imaging device cooperate to calibrate the electrode at an instant when the mobility access device is known to be unoccupied.

13. The system of claim 12 wherein the instant occurs as the mobility access device is fully deployed.

14. The system of claim 1 wherein the vehicle mobility access device comprises a wheelchair ramp including an inclined ramp section coupled to the vehicle proximate a doorway.

15. The system of claim 14 wherein the electrode is coupled to one of the ramp section and a threshold area interior to the vehicle proximate the doorway.

16. The system of claim 1 wherein the imaging module is integral with the controller.

17. A method for electric field sensing of an object on a vehicle mobility access device, the method comprising the steps of:

deploying the mobility access device;
calibrating a first electrode coupled to a first portion of the mobility access device; and
detecting the presence of an object on the mobility access device by the first electrode.

18. The method of claim 17 wherein the calibrating step comprises:
detecting an instant when the mobility access device is fully deployed;
energizing the first electrode to generate the baseline electric field at the instant;
sampling the baseline electric field; and
storing characteristics of the baseline electric field in a memory.
19. The method of claim 17 wherein the detecting step comprises:
generating an electric field from the first electrode; and
comparing the electric field from the generating step with a baseline electric field.
20. The method of claim 19 wherein the comparing step comprises:
sampling the generated electric field;
storing characteristics of the generated electric field in the memory; and
discriminating differences between the stored characteristics of the baseline electric field and the generated electric field.
21. The method of claim 17 further comprising the step of preventing operation of the mobility access device.
22. The method of claim 21 further comprising the step of actuating an alarm indicative of the presence of an object.
23. The method of claim 17 further comprising:
calibrating a second electrode coupled to a second portion of the mobility access device; and
detecting the presence of an object on the mobility access device by the second electrode.

24. The method of claim 23 further comprising the step of energizing the first and second electrodes in succession to discriminate one or more of the object's size, the object's shape and the object's distance from one or more of the first and second electrode.

25. The method of claim 17 wherein the mobility access device comprises a wheelchair lift.

26. The method of claim 17 wherein the mobility access device comprises a wheelchair ramp.